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Attorney Docket No.: 5649-805DV

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Kang-Wook Park  
Serial No.: 09/911,098  
Filed: July 23, 2001

Group Art Unit: 2814  
Examiner: Dana Farahani

For: **BIPOLAR JUNCTION TRANSISTORS HAVING TRENCH-BASED BASE ELECTRODES**

November 11, 2002

Box Non-Fee Amendment  
Commissioner for Patents  
Washington, DC 20231

**AMENDMENT AND REQUEST FOR RECONSIDERATION**

Sir:

This Amendment and Request for Reconsideration is responsive to the Official Action of August 14, 2002 (Paper No. 4).

In the Claims:

Please amend the claims as follows:

28. (Amended) A bipolar junction transistor, comprising:

a semiconductor substrate having an intrinsic collector region of first conductivity type therein that extends to a surface thereof;

an electrically insulating layer on the surface of a semiconductor substrate, said electrically insulating layer having an opening therein and a lateral recess extending from the opening;

a trench that extends into the surface semiconductor substrate and the intrinsic collector region and is self-aligned to the opening in said electrically insulating layer;

10 a polysilicon base electrode of second conductivity type in the lateral recess and in the trench;

an extrinsic base region of second conductivity type that extends into the intrinsic collector and is self-aligned to a portion of the polysilicon base electrode that extends into the lateral recess; and

15 an emitter region of first conductivity type that extends in the intrinsic collector region.

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